Regional Operational Plan CF.4K.2014.04

Kodiak Management Area Chinook Escapement Sampling Operational Plan, 2014

by

James Jackson

March 2014

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

REGIONAL OPERATIONAL PLAN CF.4K.2014.04

KODIAK MANAGEMENT AREA CHINOOK SALMON ESCAPEMENT SAMPLING OPERATIONAL PLAN, 2014

by

James Jackson
Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak

Alaska Department of Fish and Game
Division of Commercial Fisheries

March 2014

The Regional Operational Plan Series was established in 2012 to archive and provide public access to operational plans for fisheries projects of the Divisions of Commercial Fisheries and Sport Fish, as per joint-divisional Operational Planning Policy. Documents in this series are planning documents that may contain raw data, preliminary data analyses and results, and describe operational aspects of fisheries projects that may not actually be implemented. All documents in this series are subject to a technical review process and receive varying degrees of regional, divisional, and biometric approval, but do not generally receive editorial review. Results from the implementation of the operational plan described in this series may be subsequently finalized and published in a different department reporting series or in the formal literature. Please contact the author if you have any questions regarding the information provided in this plan. Regional Operational Plans are available on the Internet at: http://www.adfg.alaska.gov/sf/publications/

James Jackson,
Alaska Department of Fish and Game, Division of Commercial Fisheries
351 Research Court, Kodiak, AK 99615, USA

This document should be cited as:
Jackson, James. 2014. Kodiak Management Area Chinook escapement sampling operational plan, 2014. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Operational Plan ROP.CF.4K.2014.02, Kodiak.

SIGNATURE/TITLE PAGE

Project Title:	Kodiak Management Area Chinook Escapement Sampling Operational Plan, 2014
Project Leader(s):	James Jackson
Division, Region and Area	Division of Commercial Fisheries, Region IV, Kodiak
Project Nomenclature:	
Period Covered	May 2014 – August 2016
Field Dates:	May 2014 – July 2014
Plan Type:	Category III

Approval

Title	Name	Signature	Date
Project Leader	James Jackson		1-29-14
Biometrician	Dave Barnard	David R. Barnard	29 Jan '14
Section Supervisor	Jeff Wadle		2/6/14
Regional Supervisor	Steve Honnold		1-29-14

Chinook Salmon Research Initiative Approval

Title	Name	Signature	Date
Fish and Game Coordinator	Ed Jones		3.7.14
Fisheries Scientist	Robert Clark		3/7/14
Fisheries Scientist	Eric Volk		3/10/14

TABLE OF CONTENTS

Page

LIST OF FIGURES iii
LIST OF APPENDICES iii
ABSTRACT 1
INTRODUCTION 1
GOAL 1
OBJECTIVES 1
TASK 1
SUPERVISION 2
PROCEDURES 2
Escapement Sampling 2
DATA REPORTING 3
BUDGET SUMMARY 3
ACKNOWLEDGEMENTS 3
REFERENCES CITED 4
FIGURES 5
APPENDIX A. ADULT SALMON SAMPLING 9
Sample Next Fish: 16
Backing up data 18
Downloading data to netbook 18
Editing, Naming, and Saving Data 18
Transferring Data from Netbook onto USB Flash Drive 19
Some Notes and Reminders 20
Resetting the RDA 20
Hotsync Error Message 21

LIST OF FIGURES

Figure **Page**

1. Map depicting the Karluk and Ayakulik systems, 2014. 6
2. The "Scott" 6-panel adult salmon live box trap (photo taken at Upper Station weir). 7

LIST OF APPENDICES

Appendix **Page**

A1. Statistical (sampling) weeks and associated calendar dates. 10
A2. Procedure for sampling adult salmon age, length, and sex. 11

ABSTRACT

The Alaska Department of Fish and Game annually samples salmon escapements in the Kodiak Management Area (KMA). Weirs located on the Karluk and Ayakulik rivers are the primary mode of enumeration for Chinook salmon *Oncorhynchus tshawytcha* escapements in the KMA. Biological information such as age, sex, and length are collected annually. This information provides the foundation for escapement goal evaluation. The overall goal of this project is to provide data to assist with the long-term management of Chinook salmon runs and the refinement of escapement goals.

Key words: Kodiak, weirs, Chinook salmon, *Oncorhynchus tshawytcha*, escapement, sampling, age, length, sex, scales, operational plan.

INTRODUCTION

The Kodiak Management Area (KMA) comprises the waters of the western Gulf of Alaska surrounding the Kodiak Archipelago and that portion of the Alaska Peninsula bordering the Shelikof Strait between Cape Douglas and Kilokak Rocks.

There are about 800 anadromous salmon streams (systems) located throughout the KMA (Johnson and Klein 2009). These systems support 5 commercially important salmon species: Chinook *Oncorhynchus tshawytscha*, sockeye *O. nerka*, coho *O. kisutch*, pink *O. gorbuscha*, and chum *O. keta* salmon.

The majority of KMA Chinook salmon escape into the major salmon systems of Karluk and Ayakulik (Jackson et al. 2012; Figure 1). Weirs operated by the Alaska Department of Fish and Game (ADF&G) provide the primary mode of enumeration for virtually all Chinook salmon escapements in the KMA (Fuerst 2013).

Directed commercial fisheries occur on sockeye, pink, chum, and coho salmon; Chinook salmon are not targeted.

Age, sex, and length (ASL) composition data of KMA Chinook salmon escapements have been collected under the direction of the ADF&G since 1997. Accordingly, ASL data collected provides the foundation for escapement goal evaluation.

GOAL

The goal of this project is to provide biological data from Chinook salmon escapements to assist with the long-term evaluation of Karluk and Ayakulik Chinook salmon stocks.

OBJECTIVES

Data derived from sampling of the Karluk and Ayakulik systems escapements will be used to achieve one primary objective:

1. Estimate the age (from scales), sex, and length composition of Chinook salmon escapements into the Karluk and Ayakulik systems.

TASK

Collect and record data from representative samples of scales (for age determination), measure length, and record sex from Karluk and Ayakulik Chinook salmon escapements.

SUPERVISION

Kodiak Area Management Biologist James Jackson and Assistant Area Management Biologist Geoff Spalinger will act as overall project leaders and supervise inseason progress. KMA research and management biologists will supervise escapement sampling crews. Karluk and Ayakulik weir crew leaders, will monitor weekly escapement sampling and review incoming data for quality, quantity, and timeliness. A digital logbook will be maintained by the weir crew leader to track weekly samples. Crew leaders will be given periodic feedback regarding data quality.

PROCEDURES

The standard procedures for collecting and recording salmon ASL data are defined in Appendix A. During the 2014 season, data recording will be accomplished using rugged-digital-assistant data loggers (RDAs). All field crews will be provided new equipment and sampling protocols as new hardware and software become available. Until that time, Appendix A will serve as the standard.

The accuracy of the data and scale-sample quality will be the responsibility of the crew leaders. Because it is essential that all samples be representative, bias will be avoided by NOT pre-selecting fish based upon size, sex, condition, or any other factor. If questions or problems arise, the project leaders should be contacted immediately for clarification or assistance.

All scales, when possible, will be collected from the preferred area of each fish following the methods described by International North Pacific Fish Commission (1963). Scales will be mounted on scale "gum" cards and impressions made on acetate/diacetate cards (Clutter and Whitesel 1956). Fish ages will be assigned by examining scale impressions for annual growth increments using a microfiche reader fitted with a 60X lens following designation criteria established by Mosher (1968).

The most common method of age determination in Pacific salmon is the analysis of the concentric rings (circuli) on the scale and is the method to be used by this project. Fast summer growth results in wide spacing between circuli, whereas slow winter growth results in closer-spaced circuli; age is determined by enumerating the number of winters observed on the scale (Gilbert 1913). This method of age determination is ideal because the scale can be collected, processed, and aged rapidly. Problems encountered using scales for age determination include variable scale growth, scale regeneration, scale reabsorption, and age validation difficulties (Beamish and McFarlane 1983). While no true age validation will be performed, a subsample of catch and escapement salmon scales will be aged by separate readers for corroboration of age estimates.

Ages will be recorded using European notation (Koo 1962), with a decimal separating the number of winters spent in fresh water (after emergence) from the number of winters spent in salt water. All age data will be recorded directly into the database via the Kodiak intranet salmon aging utility using a programmable keyboard (X-keys).

Escapement Sampling

Weekly Chinook salmon escapement sampling for ASL will be conducted at the Karluk and Ayakulik systems. Samples will be collected at both systems using a "Scott" 6-panel live box trap (Figure 2) incorporated into the weir. Three weekly samples will be collected on alternating

days if possible (e.g., Monday, Wednesday, and Friday), to provide a better representation of weekly escapement. Weekly sample size will reflect a percent of the number of fish counted through the weir since the last sampling event (2% Karluk; 1.5% Ayakulik; Unpublished document obtained from Tracy and Schmidt 2010). If escapement numbers decline and there is concern that the minimum sample size will not be achieved, sampling efforts will be adjusted to meet the total goal. During 2014, the sampling week will start on Saturday and end on Friday. Sampling weeks and corresponding calendar dates are listed in Appendix A1.

DATA REPORTING

KMA weir crew leaders **WILL NOTIFY** their supervisors, via Single Side Band (SSB) radio or satellite telephone, of **weekly** sampling results. Field camp personnel will send completed samples back to Kodiak on return grocery or mail flights. Packages should be clearly labeled to include: system, sample dates, and be addressed to Michelle Moore (or the assigned project biologist). The pilot should be instructed to call Fish and Game at 486-1855 for package pick-up.

Only those personnel passing the 2014 Westward Region scale-aging test will age the samples.

Data from both the catch and escapement samples in 2014 will be compiled and published by Michelle L. Moore in the 2014 Kodiak Management Area Catch and Escapement Sampling Results report that will be published in January of 2015. Descriptions of component programs used to compute age, length, and sex composition summaries can be found in database end user documentation (Unpublished ADF&G Commercial Fisheries Division database documentation obtained from Neil Moomey 2013, Kodiak, Alaska).

BUDGET SUMMARY

Proposed FY2014 Costs:

Line Item	Category	Budget ($K)
100	Personal Services	25
200	Travel	0
300	Contractual	5
400	Commodities	0
500	Equipment	0
	Total	30

ACKNOWLEDGEMENTS

I would like to thank Michelle Moore for contributing to the content within this report as a previous author.

REFERENCES CITED

Beamish, R. and G. McFarlane. 1983. The forgotten requirement for age validation in fisheries biology. Transactions of the American Fisheries Society 112:735-743.

Clutter, R. and L. Whitesel. 1956. Collection and interpretation of sockeye salmon scales. International Pacific Salmon Fisheries Commission, Bulletin 9, New Westminster, British Columbia, Canada.

Fuerst, B. A. 2013. Kodiak commercial fisheries salmon management field camp and weir operational plan, 2013. Alaska Department of Fish and Game, Regional Information Report. 4K13-02, Kodiak.

Gilbert, C. 1913. Age at maturity of the Pacific coast salmon of the genus *Oncorhynchus.* United States Bureau of Fisheries Bulletin 32:1-22.

International North Pacific Fisheries Commission. 1963. Annual Report 1961, Vancouver, British Columbia.

Jackson, J., J. Dinnocenzo, G. Spalinger, and M. Keyse. 2012. Kodiak Management Area commercial salmon fishery annual management report, 2011. Alaska Department of Fish and Game, Fishery Management Report No. 12-48, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMR12-48.pdf

Johnson, J., and K. Klein. 2009. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southwestern Region, Effective June 1, 2009. Alaska Department of Fish and Game, Special Publication No. 06-18, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/sp09-05.pdf

Koo, T. 1962. Age designation in salmon. Pages 37-48 [*In*] T.S.Y. Koo, editor. Studies of Alaska red salmon. University of Washington Publications in Fisheries, New Series, Volume I, Seattle.

Mosher, K. 1968. Photographic atlas of sockeye salmon scales. Bureau of the U.S. Fish and Wildlife Service. Fishery Bulletin 67(2):243-280.

FIGURES

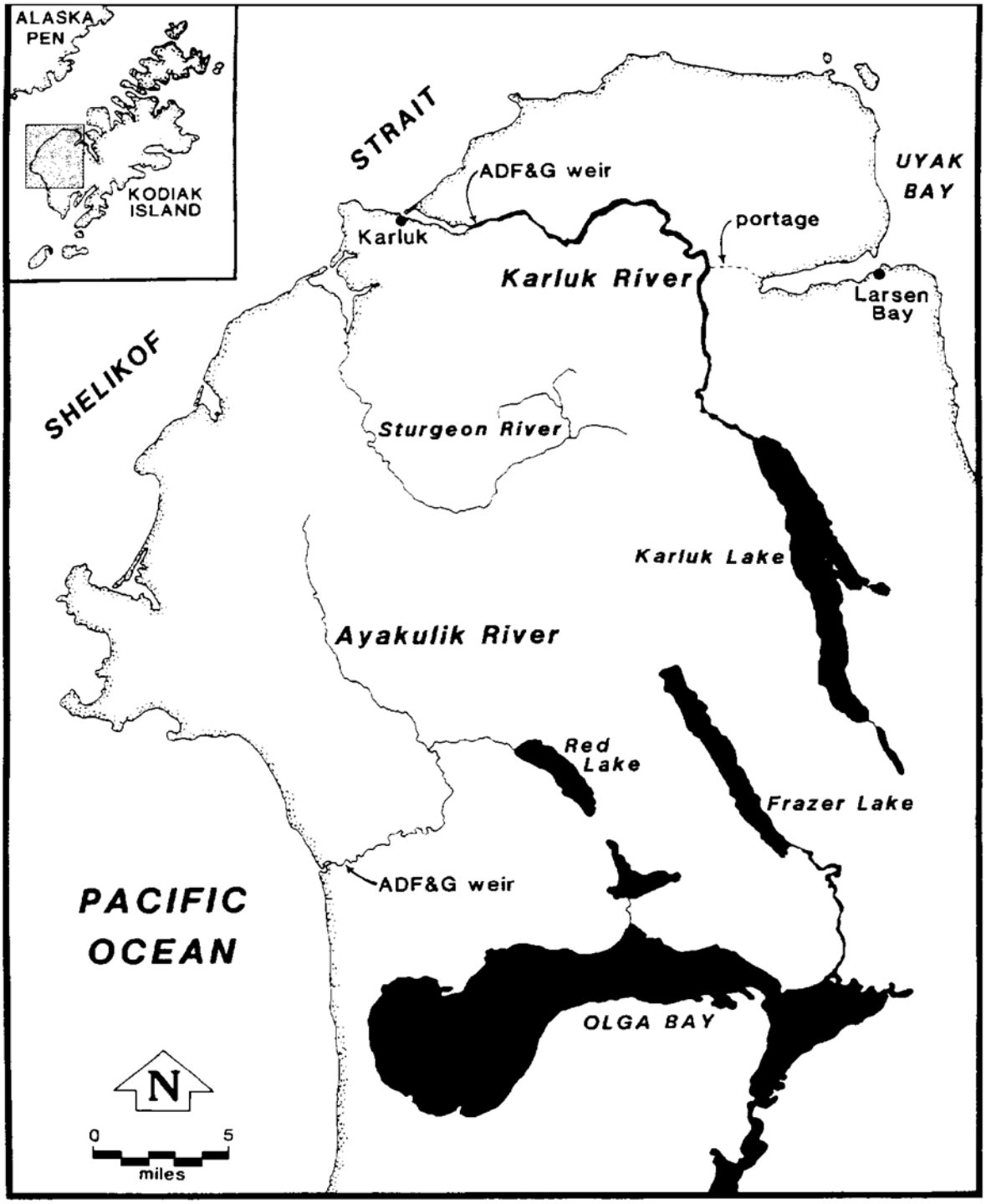


Figure 1.–Map depicting the Karluk and Ayakulik systems, 2014.

Figure 2.–The “Scott” 6-panel adult salmon live box trap (photo taken at Upper Station weir).

APPENDIX A. ADULT SALMON SAMPLING

Appendix A1.–Statistical (sampling) weeks and associated calendar dates.

Week	Calendar Dates	Week	Calendar Dates
10	1-Mar – 7-Mar	28	5-Jul – 11-Jul
11	8-Mar – 14-Mar	29	12-Jul – 18-Jul
12	15-Mar – 21-Mar	30	19-Jul – 25-Jul
13	22-Mar – 28-Mar	31	26-Jul – 1-Aug
14	29-Mar – 4-Apr	32	2-Aug – 8-Aug
15	5-Apr – 11-Apr	33	9-Aug – 15-Aug
16	12-Apr – 18-Apr	34	16-Aug – 22-Aug
17	19-Apr – 25-Apr	35	23-Aug – 29-Aug
18	26-Apr – 2-May	36	30-Aug – 5-Sep
19	3-May – 9-May	37	6-Sep – 12-Sep
20	10-May – 16-May	38	13-Sep – 19-Sep
21	17-May – 23-May	39	20-Sep – 26-Sep
22	24-May – 30-May	40	27-Sep – 3-Oct
23	31-May – 6-Jun	41	4-Oct – 10-Oct
24	7-Jun – 13-Jun	42	11-Oct – 17-Oct
25	14-Jun – 20-Jun	43	18-Oct – 24-Oct
26	21-Jun – 27-Jun	44	25-Oct – 31-Oct
27	28-Jun – 4-Jul	45	1-Nov – 7-Nov

SAMPLING PROCEDURES

Place the salmon flat on its right side (the head should be toward the left).

Measure the length (in mm)

Adult salmon length is measured from mid-eye to tail fork because the shape of the salmon's snout changes as it approaches sexual maturity. Slide the fish in place so that the middle of the eye is in line with the edge of the meter stick and hold the head in place with your left hand. Flatten and spread the tail against the board with your right hand. Read and record the mid-eye to tail fork length to the nearest millimeter. Please look at Figure 1.

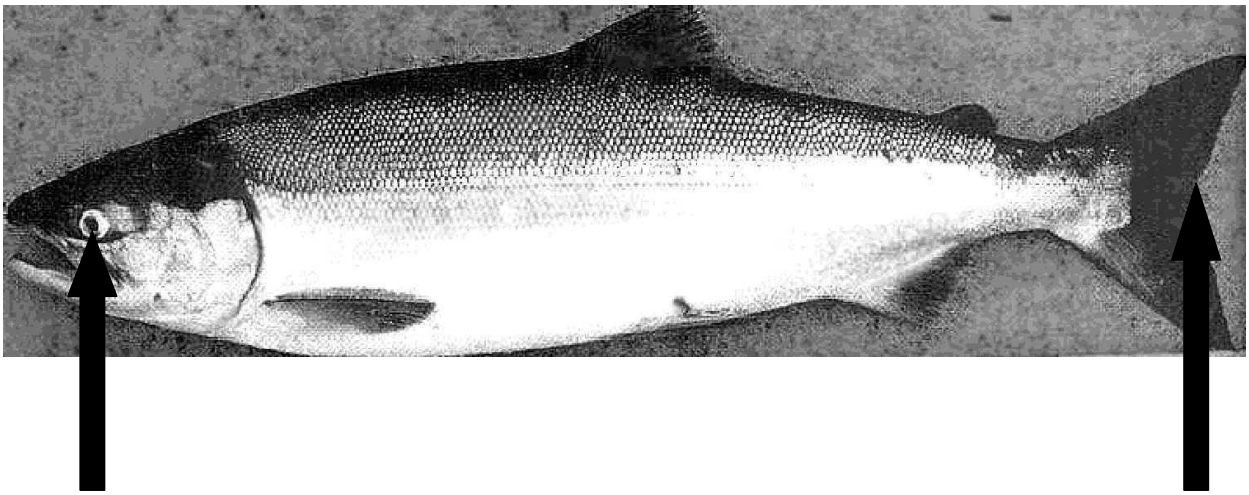


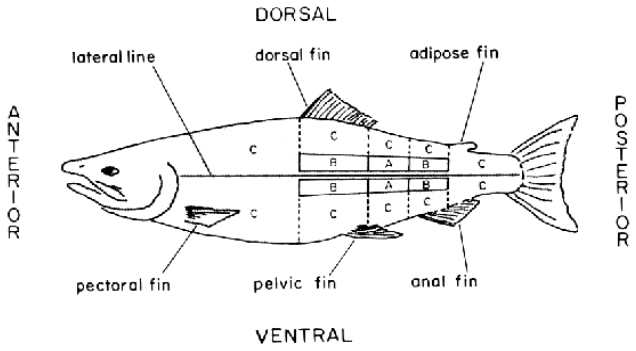
Figure 1.–Measuring fish length from mid-eye to tail fork.

Determine the sex of the fish.

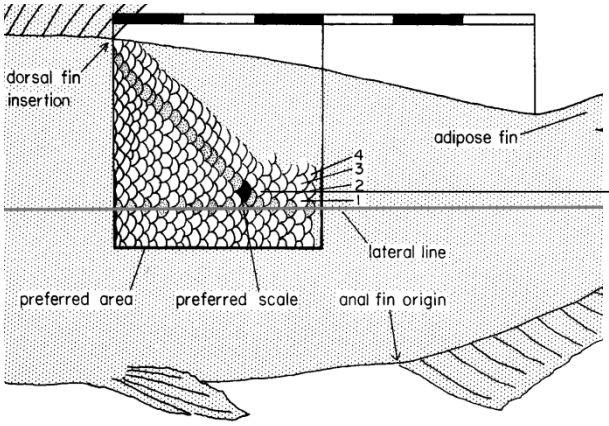
Remove the preferred scales and place on scale card

The preferred scales should be properly placed on a labeled scale (gum) card (Figures 2 and 3). Four scales are taken for each fish. Scale cards should be labeled as soon as possible. The preferred scales are located 2 rows up from the lateral line, on a diagonal from the insertion (posterior) of the dorsal fin toward the origin of the anal fin (Figure 2). Samplers should be careful to make sure that the scales are not flipped over before they are placed on the scale card**.**

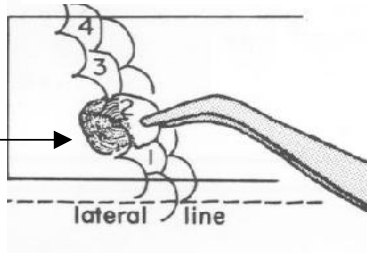
-continued-

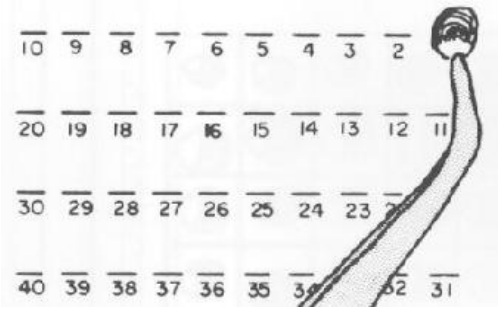


Area A is the preferred area. If scales on the left side are missing, try the right side. Area B is the second choice if there are no scales in Area A on either side of the fish. Area C designates non-preferred areas.



Do not turn scale over.

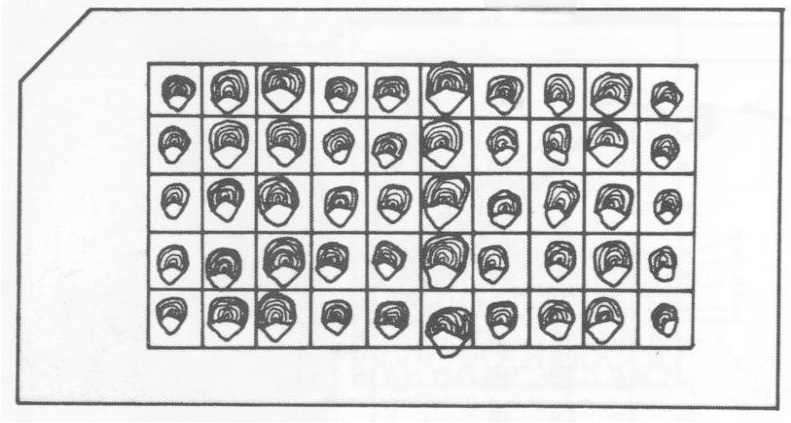




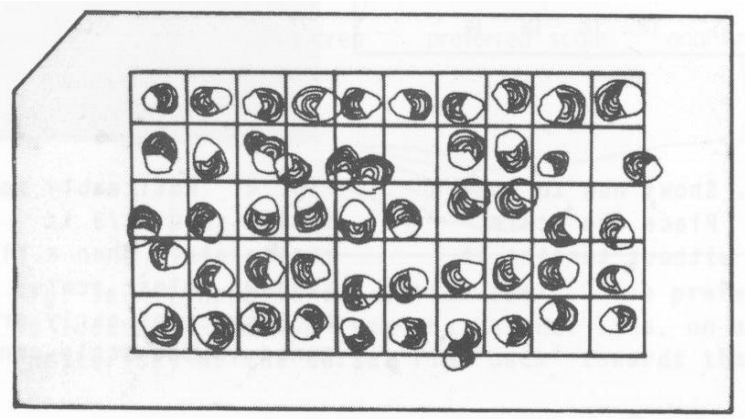
The preferred scale in this diagram is solid black. It is located 2 rows up from the lateral line, on a diagonal from the insertion (posterior) of the dorsal fin "back" toward the origin of the anal fin.

Figure 2.–Removal and placement of the preferred salmon scales onto the scale card.

-continued-



The scales are correctly oriented on the card in the same direction, with the anterior portion of the scale pointed toward the top of the card and the posterior portion (the portion of the scale held in the forceps) pointed toward the bottom of the card.



The scales are incorrectly oriented in different directions. This increases the time spend to age samples.

Figure 3.–Scale orientation on scale card.

-continued-

DATA ENTRY/MANAGEMENT

Data obtained while sampling is recorded using a Meazura Rugged Digital Assistant (RDA). The RDA is a waterproof device used to digitally record sampling data. Sample information is transferred from the device to a netbook after each sample. A USB flash drive is used to save and transfer data from the netbooks located in field camps, to the office, throughout the season. An RDA is shown in Figure 4.

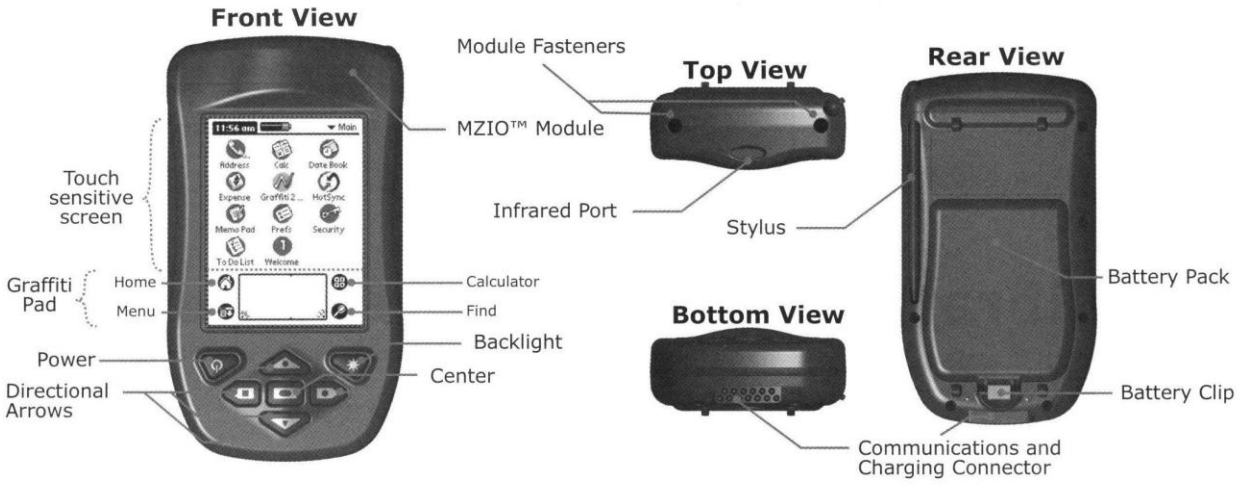


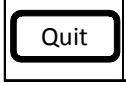
Figure 4.–Rugged Digital Assiatant (RDA).

ENTERING DATA INTO THE RDA

To begin using the RDA, turn it on by pressing the power button (Table 1). Using the stylus, tap the home icon in the bottom portion of the screen to bring up the main menu. It may be necessary to press the home icon several times to bring up the entire main menu. Next, tap the Forms 5.1 icon. Pendragon Forms (Forms 5.1) is the program that you will use to enter all of the sample data. After the icon is selected, the Pendragon Forms screen will appear. If a form was left open by a previous user, it may be necessary to hit the Quit or Done button to get to the main list of forms. Highlight the appropriate sampling form (**ChinookAdult_ASL_2014.XX**) and select New, which is found in the lower left corner of the screen. The four main buttons of the form will now be visable: ***Enter Background Info, Sample Next Fish, Review***, and ***Quit***.

-continued-

Table 1.–Buttons and Icons addressed in the text.

Image	Description
	Power Button - Button you will press on the RDA itself
	Home Icon - Use the stylus to navigate to the home screens
	Forms 5.1 Icon - Use the stylus to open pendragon forms 5.1
	This is an example of a button within pendragon forms. Use the stylus to select these buttons.

ENTER BACKGROUND INFO

Background information must be entered at the start of each sampling event. A new day always constitutes a new sampling event, so it will be necessary to enter new background information typically once per sampling day. For most projects, changing the background information each day will consist of updating the date only. It is important to edit background information when any change in sampling information occurs. The following topics constitute sampling information. If information in one of the following categories changes, it is necessary to change the background information.

Species

Select the appropriate species from the drop down list on the RDA, such as Chinook.

Project

Indicate the pertinent project from the dropdown list. For example, if sampling adult Chinook escapement at a weir, choose Escapement.

Management Area

Choose the relevant management area from the dropdown list. Samples collected from Kodiak Island statistical areas must have Kodiak selected as the proper management area.

Area Sampled

Select the area that best represents where the fish were sampled, such as Ayakulik River, from the dropdown list.

Location Type

Indicate the type of area in which the fish were sampled. For example, if the fish were sampled at the Karluk weir, choose Weir from the drop down menu.

-continued-

Gear

Select the type of gear in which the fish were caught, such as Trap.

Type of Length Measurement

Designate the type of length measurement taken. Adult salmon lengths are typically measured from mid-eye to tail fork.

Date of Sample

Escapement sampling: Use the date the fish are sampled.

Sampler Initials

Enter the initials of the sampling crew (up to 3 persons). This can be done by writing in the box on the bottom of the screen, or by using the pop up keyboard.

Notes

1. When entering text, tap on the dot by the abc icon to bring up a keyboard. 
2. To delete a character, place the stylus in the text box and draw a small straight line from right to left. 

SAMPLE NEXT FISH:

After entering background information, the RDA is ready to collect individual fish data. The Sample Next Fish button is used to enter the details of each fish sampled. It is not necessary to click on the Sample Next Fish button when entering the first fish of a new sample. After entering the background information, the form automatically knows to go to the sample next fish section of the form. As you continue to sample, simply tap Sample Next Fish or Next to enter individual fish data. This option is used when continuing to the next fish of a sample where no background information has changed. Fish data that is entered here is associated with the current background information logged. The following constitute fish data and should be entered for each fish.

Scale Card Number

Scale (gum) cards are numbered sequentially by date throughout the season starting with 1. A separate numbering sequence will be used for each species or major location change. Consult your crew leader for the current card number. It is crucial to make sure the number written on the scale card matches the scale card number entered into the RDA. The Scale card number will automatically advance to the next number after fish number 10 is recorded.

Fish Number

The fish number is the number of the fish on a particular scale card. This must be a number between 1 and 10. By default, the fish number in the RDA will automatically advance after each fish is sampled. It will also automatically go from 10 to 1.

-continued-

Sex

Select the sex of the fish.

Length in mm

Enter the length of the fish from mid-eye to tail fork in millimeters (i.e., 534). If for some reason you do not collect a length measurement, enter 999.

Fin Clip and Tag Color

Select the Skip Fin Clip and Tag Color button if appropriate. If sampling involves fin clips or tags you can enter the optional fin clip and tag information. Indicate the type of fin clip (e.g., axillary process) or tag color using the drop down menus.

Sample Next Fish

Select Sample Next Fish to continue sampling.

Review

The review button can be a very useful tool during sampling. It can be used to ensure data being entered is accurate, or it can be used for editing fish data during a sample. The review portion of the form displays card number, fish number, sex, and length. The most recently sampled fish appear first. To enter the review screen, tap on the Review button on the main screen of the form. After the data has been reviewed and edited, tap the Done button on the bottom right of the screen to return to the main screen of the form. If Sample Next Fish is selected after leaving the review screen, the auto-increment will continue as if the review screen was never entered.

Reviewing Data

To review the last data entered, tap the Review button on the main screen of the form. Use the scroll bar on the right side of the screen to look at the fish that have been entered.

Editing Data

If fish data needs to be edited, tap on it using the stylus. Tap on the Sample Next Fish button to go through the fish data that was previously entered for that fish. Changes can be made as needed. Buttons chosen prior to the review are highlighted with asterisks. After a fish has been edited, the main review screen appears. If a fish is accidently selected from the main review screen, click the button that has the Card#-Fish# to return to the main review screen without going through the fish data. As mentioned above, tap Done to exit the review portion of the form and return to the main screen.

Quit

When sampling is complete, tap Quit to exit the form.

-continued-

DATA MANAGEMENT

After sampling is done for the day, it is required that the data be backed up on the RDA itself, and then transferred (by HotSync) to the netbook.

BACKING UP DATA

After each sample the RDA should be backed up so that data is stored on both of the compact flash drives. Turn the RDA on and tap the home icon in the bottom portion of the screen to bring up the main menu. Tap the CardBkup icon if it is present and then the Backup Now button at the top left of the screen. The data will now be on both flash drives. If the RDA does not have a CardBkup icon, it will back up automatically.

DOWNLOADING DATA TO NETBOOK

Connect the communications cable into the RDA and a USB port on the netbook. Press the power button to turn on the RDA and begin a HotSync by tapping the home icon, and then the HotSync icon found on the main menu. Tapping the large icon in the center of the screen will start the HotSync operation (Figure 5). Please make sure the RDA is dry before downloading any data to the netbook.

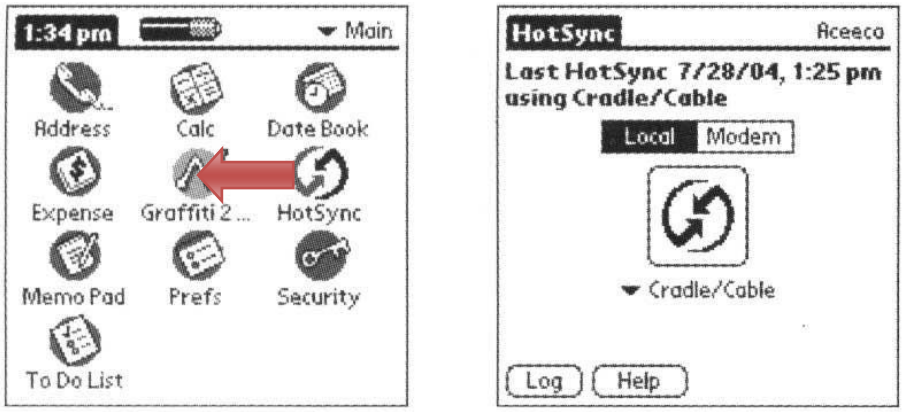


Figure 5.–HotSync Screens Found on RDA

EDITING, NAMING, AND SAVING DATA

If a mistake is realized during a sample it is often easiest to document the mistake and send the correction in with the USB flash drive for the Kodiak office to fix. If a mistake is made during the sample it can be changed using the review portion of the form in the RDA. Data can also be changed after it is downloaded onto the netbook, but is not recommended unless the Kodiak office is consulted first. A HotSync operation after changes have been made on the netbook will update the RDA.

-continued-

To view data, HotSync the RDA and open Pendragon Forms Manager (a shortcut should be located to the right of the start menu) on the netbook. Select the form (ChinookAdultASL_2014.XX), and click Edit/View under Data Functions on the right side of the window. All data will now be visible. Make the necessary changes here and exit out of the window to save. It is important to correct the numbers under the proper column and consult the Kodiak office. Hotsync the RDA to the netbook after any changes are made on the netbook to update the RDA with all changes.

After data has been edited and verified, a copy of the database will need to be exported from the Pendragon software and saved on the netbook. In Pendragon Forms Manager, under Data Functions on the right side of the window, click To ASCII. Navigate to the folder in which the data is being saved. Type in the file name and then save. The file name should follow this format: Area_Sampled_ChinookYYYYMMDD.csv (e.g., Karluk_River_Chinook20140714.csv). After saving, a window will pop up stating the file has been created. Each .csv file will contain all of the data that has been collected up to that point in the season. Do not edit or save the .csv file as an Excel file or it will be difficult or impossible to upload the data into the database.

TRANSFERRING DATA FROM NETBOOK ONTO USB FLASH DRIVE

Up to date data should be sent into the main office as often as possible (e.g., with the grocery plane). Insert a USB flash drive into an appropriate port on the netbook. Double click on MyComputer, which is found on the desktop of the netbook. Navigate to the folder where your data is saved and highlight the most recent file (determined by the date) by single clicking. With the file highlighted, click on edit at the top of the window and then copy. Open up MyComputer and double click on the USB flash drive (often called Removable Disk) found under the heading Devices with Removable Storage. Click on edit at the top of the window, and then paste. The .csv file that was copied earlier will appear in the window indicating it was copied to the flash drive. Exit out of all windows and single click on the safely remove hardware button on the bottom right corner of the desktop in the quick start menu. Click on Safely remove USB Mass Storage Device. A pop-up will verify that it is now safe to remove the flash drive from the system.

POWERING THE NETBOOK AND RDA

1. The RDA can be charged with either the AC or DC powering options. It is the crew leaders responsibility to keep it charged
2. The netbook can only be charged with the AC power adaptor, therefore plan accordingly for generator use. The charging light on the netbook is red when charging, and green when fully charged.
3. If there are powering problems, please contact the office immediately.

-continued-

SOME NOTES AND REMINDERS

1. Connect the AC adaptor to the bottom of the communications cable to charge the RDA batteries. If using the DC charger, connect the charger into the communications port.
2. If a mistake is noticed before moving onto the next fish, the previous button can be used to make changes in the RDA without having to go to the review screen or alter the data on the netbook.
3. Each length, sex, and scale must correspond to a single fish! It is the responsibility of the crew leader to be sure the data has been entered correctly.
4. For greater efficiency in scale reading, mount scales with anterior end toward top of gum card (Figure 3).
5. Never put data from different dates onto one gum card, and always enter new background information. Even if only one scale is collected that day, enter new background information and begin a new gum card the next day.
6. Be careful when collecting and mounting scales in wet conditions (rain, high humidity, etc.). If glue dries on top of the scale, it often obscures scale features, resulting in an unreadable scale. In addition, scales frequently adhere poorly to a wet gum card. Protect the cards and keep them dry to avoid having to remount the scales on a new card. If the cards get wet, try to dry them in a protected area or remount if necessary. Use a pencil when filling out gum cards, because ink will come off during pressing.
7. Responsibility for accuracy lies first with the primary data collector(s) and finally with the crew leader. Sloppy or incomplete data or gum cards will be returned to individual collectors for correction.
8. Ensure that all equipment is well kept. Electronics should be stored in a clean safe place. Dry off the RDA with a paper towel after sampling events. The RDA must be dry before transferring data to the netbook. RDA batteries must be charged to make certain sampling is not hampered. It is the responsibility of the crew leader to make sure that all data is carefully examined and edited before returning it to their supervisor.

TROUBLESHOOTING

RESETTING THE RDA

If problems are encountered with the RDA, A soft reset can be done without losing data. To perform a soft reset hold the power and backlight button down together and release at the same time. If a soft reset does not work, the office should be contacted about other options for resetting.

-continued-

HOTSYNC ERROR MESSAGE

HotSync message includes "Exceeded user storage space limit of 500KB in form 'ASL_ #.##'

1. Open Pendragon Forms Manager
2. Under Form Function click on "Properties"
3. Click on "Advanced Properties"
4. Click on the "Synchronization Tab"
5. Change the Storage Limit (KB) to 5000 instead of 500.
6. Click "OK"
7. Under Form Functions Click on "Distribute"
8. Hotsync the RDA and the Netbook